Handbook

Southern Illinois State Normal University

CARBONDALE

1893

Southern Illinois State Normal University.

HANDBOOK

OF THE

SOUTHERN ILLINOIS

STATE NORMAL UNIVERSITY

CARBONDALE

PUBLISHED BY THE UNIVERSITY

1893

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Introductory Note.

This Handbook is a part of the Exhibit of the Southern Illinois State Normal University at the World's Columbian Exposition, Chicago, 1893.

The preparation of the Exhibit began with the spring term of 1892, and ended with the winter term of 1893. Except as indicated the work displayed was done by students of the school. In the Training Department the children's work was done under the management of practice teachers.

Visitors are invited to examine the bound volumes of manuscripts, and the manuscripts and drawings on the charts in the cases.

JOHN HULL, Regent.

May, 1893.

HISTORY.

AN ACT of the General Assembly of the State of Illinois, approved April 20, 1869, gave birth to this Normal School. By this act it was provided that five trustees should be appointed by the Governor of the State, who should fix the location, erect the building, and employ teachers for the school. The trustees located the school in the town of Carbondale, on a lot of twenty acres, three-fourths of a mile south of the station of the Illinois Central railroad. The corner-stone was laid on the 17th day of May, 1870. The building was finished in time to be dedicated July 1, 1874; the first faculty commenced the work of instruction in the new building July 2, 1874, at which time a Normal Institute of four weeks was opened with fifty-three pupils attending.

On the 6th day of September, 1874, the regular work of the Normal University commenced.

On the afternoon of November 26, 1883, at three o'clock, this beautiful building was discovered to be on fire; and before five o'clock p. m., despite the efforts of faculty, students, and citizens of Carbondale, the entire building was in ruins. By the heroic labors of students, teachers, and citizens, the large library was saved, and most of the furniture; also the philosophical and chemical apparatus.

The citizens kindly offered the use of rooms in some of the business blocks, which the trustees accepted, and the school went on with the regular recitation work, with an actual loss of less than two days. In the meantime a plan was proposed for a temporary school building, and in less than sixty days a building was completed containing fourteen rooms, and the Normal School began its wonted duties in this, its temporary home.

The General Assembly, by an act approved June 27, 1885, appropriated $152,065 to replace the first building, then lying in ruins.

The present building is a magnificent structure, in many respects superior to the one destroyed by fire. It was dedicated Thursday, February 24, 1887, and occupied by the school on the following Monday.

In June, 1892, Dr. Robert Allyn, for eighteen years principal, resigned, and the duties of head-master were assigned to the present regent, who for seventeen years had been a member of the faculty of the school.

AIMS.

The State has found that its public school system is inefficient and incomplete without State Normal Schools. If the State undertakes to have its citizens educated, its honor is staked upon having them well educated. This end can be attained best by teachers who have been trained thoroughly in the common branches, who are inspired with an ideal such as only higher studies can give, and who are ambitious to realize that ideal in the public schools. This State Normal School is supported by the people, for the people; its course of study dips down to reach the public schools, so that a boy or girl from the district school may begin here to be fitted to teach; the same course, if completed to graduation, fits the young man or woman, not merely to pass an examination, but to be a power in the public school and to improve self and the school year by year.

The communities throughout the State are furnished by nature with the material support of education; but the training and culture which teachers must have if they are to elevate the schools, can be provided only by the collective wealth and wisdom of the State.

GENERAL INFORMATION.

DEPARTMENTS.

The object of the University is to do a part of the work of education undertaken by the State. This is provided for in the Courses of Study following, under three general heads; viz.—A Normal Department, consisting of the Normal School, including the Training work, and the Graduate work; a High School Department; and a Preparatory Department, consisting of a Grammar and a Primary School.

The *Normal Department* is to give thorough instruction in the elementary and higher portions of the school course of study, and, indeed, to fit the student by knowledge and disci-

pline for the practical duties of a teacher. It aims to give, in addition to instruction, opportunities of observation and trial; so that one passing through the course shall not be a novice in his calling when he enters the school room. With this idea in mind, every branch prescribed to be taught in the common and high schools of our State is carefully studied. Accuracy and complete thoroughness are points held in mind in every recitation, and drills upon the elements are made a specialty. Great attention is therefore bestowed upon the earlier parts of the course, such as spelling and pronunciation, reading and defining, drawing, writing, vocal music, and physical training. The body needs culture and systematic activity quite as much as the soul, and we begin with making it the servant of the mind, and habituating it to an unhesitating obedience.

The methods of our teaching are distinctively Normal. What the student is required to learn, and the method of presenting it, are both designed to give him who intends to become a teacher the philosophy of learning and remembering, and the philosophic manner of imparting knowledge and securing discipline.

The *Training work* is designed to fit students of this institution to become practical teachers. It comprises (1) a study of psychology, ethics, pedagogy, school law, and practical ethics; (2) attendance of practice-teachers upon weekly meetings held for a study of methods of instruction and management of pupils and classes; (3) actual teaching in the Preparatory schools, under the constant supervision of the Training and other teachers of the Normal School.

Our *Graduate work* offers to graduates of State Normal Schools a more extended line of professional study and reading.

The *High School* is meant to serve those who wish to pursue their studies beyond the Grammar School Course but do not wish to take up the distinctively Normal work. It gives a full preparatory course for admission to college, and for entrance upon business or the studies for professional life.

The *Grammar School* is designed to give complete instruction in the common branches of an English education, and to supplement the acquirements of young persons who come to us from the public schools with a training too imperfect to be admitted to the Normal School. Time, four years.

The *Primary School* covers the first four years of school life. Here the pupils are fitted for the Grammar School.

The design of the *Preparatory Schools* is to be an example of what schools below the high schools should be, and to afford to those preparing themselves to teach, a place where they may observe the best methods in operation, and where, at suitable times, they may practice the calling of a teacher under the supervision of those thoroughly experienced. It is understood that the several professors in their special departments will have immediate supervision of the work of teaching in these schools; and we ask particular attention to this feature of our business, and invite the county superintendents' notice to it as a branch of work which may be made of great value to those who are preparing themselves for the exercise of the teacher's vocation within their respective counties.

COURSES OF STUDY.

The *Courses of Study*, we repeat, have been arranged with two purposes in view—(1) to give a strictly Normal course of training to fit teachers for public schools, and (2) to give example of methods of teaching. They therefore go over the whole curriculum of school studies, and give special attention to those branches which require the use of the observing and perceptive faculties, without neglecting those which demand the use of the imagination and reason. Practical attention is devoted to physics, chemistry, natural history, geography, number, and language; the student is not only taught to know, but to do the work of the branches which he pursues. He is also required to give instruction in all that he learns, so that when he begins his life work he may not be wholly inexperienced.

These *Courses* are arranged in the order which ages have found most profitable and philosophical; all experience has shown that the first qualifications of a teacher are knowledge and personal self-discipline. The study of methods or practice will go for little until the scientific education has been obtained. The earlier studies are elementary, and the later ones calculated for stimulating thought when it is growing to maturity and needs discipline in proper directions.

The entire course of study is embodied in the accompanying schedules and tables of studies. There is a natural order of succession of studies; and long experience has shown that this cannot be inverted without harm.

Normal Hall.

Regent's Office.

GRADUATE COURSE.

Graduates of this or other State Normal Schools may have special work in any of the branches named in our Courses of study, and by this means make themselves more familar with such subjects.

DIPLOMAS.

Diplomas are granted to those who complete one of our Courses of Study.

PHYSICAL TRAINING.

Physical Training is compulsory upon all students, unless excused by the certificate of a physican; and if so excused, the student is expected to be present at the drills in the exercises for such time as the teacher of this department shall require. Complete courses are marked out, and students are expected to follow them, as in other branches.

CONDITIONS OF ADMISSION.

To be admitted to the Normal Department of the University, students must have completed their sixteenth year, and must be able to pass an examination equivalent to the requirements for a second-grade certificate. Persons sixteen years old and over, unable to pass this examination, may be admitted to the Preparatory Department, but in no case for a longer period than six months, except on payment of tuition. Admission without examination is granted to those who present an appointment by County Superintendent, a first-grade certificate, or a diploma from a reputable high school.

Applicants for admission must present evidence of good moral character; and to secure free tuition they must pledge themselves to teach in the public schools of the State for a time not less than that covered by their attendance on the school, the pledge to be void, however, if engagement to teach cannot be secured by reasonable effort.

DISCIPLINE.

Progress in all government has been towards self-government; this is by self-activity, not by repression from others. Poor teaching requires much discipline.

In a Normal School, discipline is at a minimum because the students are there for a purpose they appreciate.

FACILITIES FOR ILLUSTRATION.

MUSEUM AND CABINETS.

In the first story a large room is set apart as the Museum, and it is supplied with elegant center and wall cases of best design and finish, for display of specimens.

The cabinets of minerals and rocks are large, varied, and amply sufficient for the practical work of the student. He will find the zoölogical and botanical cabinets, comprising thousands of specimens from land and sea, an invaluable aid in his studies in natural history.

More than four thousand specimens have been collected and arranged in the Museum.

APPARATUS.

The University possesses a very complete set of physical and chemical apparatus which is annually increased by appropriations of the General Assembly.

The equipment includes, among other pieces of value, a Tœpler-Holtz electrical machine, one of Ritchie & Son's best air-pumps with the necessary accessory attachments, a compound microscope of high power, a thermo-electric pile and galvanometer, Crooke's and Geissler tubes, an electrical rotator, a Ruhmkoff's induction coil, and a college stereopticon with views of scientific subjects.

The Chemical Department has an excellent laboratory supplied with water, gas, a full set of reagents, and apparatus.

The Mathematical Department has a surveyor's transit and compass, which the classes in trigonometry and surveying are required to use constantly.

The Astronomical Department has lately purchased one of Clark & Son's superior telescopes direct from their factory,

costing $450.00. The instrument has a five-inch object glass, and eye-pieces varying in power from 50 to 360 diameters. It has both the declination and equatorial movement.

LIBRARY AND WORKS OF REFERENCE.

The University has a complete set of books of reference,—cyclopedias, biographical and pronouncing dictionaries, gazetteers, atlases, etc., which are placed in the study hall, or in the several recitation rooms, so that the students may consult them at any time.

The Library proper occupies a spacious room; it is well furnished, and, in connection with the Reading Room, is open all of each school day and from nine to twelve on Saturdays. The Library contains now over 11,000 volumes, and includes a professional library for teachers.

LITERARY SOCIETIES.

The students have organized two literary societies for the purpose of mutual improvement. They are the Zetetic Society and the Socratic Society. They meet every Friday evening. These afford one of the best means of culture, discipline, and instruction in the practical conduct of business. They have elegant rooms, admirably fitted and furnished. They represent the energy of the students, and show their devotion to the practical preparation for the public duties of life.

CHRISTIAN ASSOCIATIONS.

The Young Men's Christian Association and the Young Women's Christian Association have each a large and well conducted society which meets weekly; their committees look after strangers coming to the school, and students who may be sick while attending school.

LOCATION, ETC.

Carbondale is a city of 3,000 inhabitants, healthful and beautiful, with a refined and cultured people. It is easy of access, and offers inducements for board and social advantages beyond most places. It has, perhaps, fewer temptations to idleness and dissipations, and combines religious and educational privileges in a degree greater than the average of towns and cities. Parents may be assured that their children will be as safe as in any school away from home, and scholars may come here and be certain that economy and industry will be respected and assisted by all. The Illinois Central, the Carbondale & Grand Tower, and the Cairo Short Line railroads afford ample facilities for convenient access.

EXPENSES.

To those who sign the pledge to teach, tuition is gratuitous; but the law of the State requires that there shall be a fee charged for incidentals. At present this fee is $3.00 per term of fifteen weeks, and $2 per term of twelve weeks. The rates of tuition in the different schools are as follows:

	Fall Term.	Winter Term.	Spring Term.
Normal School.....	$9 00	$6 00	$6 00
High School.....	9 00	6 00	6 00
Grammar School.....	6 00	4 00	4 00
Grammar School.....	4 00	3 00	3 00
Primary School.....	4 00	3 00	3 00

First and Second Reader pupils, free.

Board can be had in good familes in Carbondale, at rates varying from $3 to $3.50 per week; and by self-boarding, or by boarding in clubs, the cost may be reduced to $2.25 per week. Two clubs are in successful operation. Books are sold by the book stores at reasonable prices.

LENGTH OF TERMS.

The Fall term is fifteen weeks, and the Winter and Spring terms together make twenty-three weeks.

NORMAL DEPARTMENT

ENGLISH COURSE.

	STUDIES.	NORMAL.		
		1st Year.	2d Year.	3d Year.
		1 2 3	4 5 6	7 8 9
I.	Psychology	. . . . .	† . . † . . .	. . . . .
	Ethics	. . . . .	. . . . . †	. . . . .
	Pedagogy	† . . . † . . .	. . . . .	. . . . † . . . †
	School Law	. . . . .	. . . . .	† . . . . .
	Practice Teaching	. . . . . †	† . . . † . . . †	. . . . .
II.	Botany	. . . . . †	. . . . .	. . . . .
	Physics	. . . . .	†	. . . . .
	Zoology	. . . . .	. . . . † . . .	. . . . .
	Physiology	. . . . .	. . . . . †	. . . . .
	Chemistry	. . . . .	. . . . .	† . . . . .
	Geology	. . . . .	. . . . .	. . . . † . . . .
	Astronomy	. . . . .	. . . . .	. . . . . †
III.	Arithmetic	† . . †	. . . . .	. . . . .
	Algebra	. . . . .	† . . . † . . . †	. . . . .
	Geometry	. . . . .	. . . . .	† . . . † . . . .
	Bookkeeping	. . . . .	. . . . .	. . . . † . . .
IV.	Reading and Phonics	† . . . . †	. . . . .	. . . . .
	Grammar	. . . . † . . . †	. . . . ‡ . . .	. . . . .
	Rhetoric	. . . . .	†	. . . . .
	English Analysis and Composition	. . . . .	. . . . ‡ . . .	. . . . .
	English Literature	. . . . .	. . . . .	† . . . ‡ . . .
	Elocution	. . . . .	. . . . .	. . . . . †
	Spelling	. . . . .	. . . . .	. . . . .
V.	Geography	† . . . †	. . . . . †	. . . . .
	History	. . . . † . . . †	. . . . .	† . . . ‡ . . . .
	Civil Government	. . . . .	. . . . . †	. . . . .
VI.	Penmanship	†	. . . . .	. . . . .
	Drawing	. . . . .	† . . . † . . .	† . . . . .
VII.	Vocal Music	One Term.		. . . . .
	Physical Training	See Syllabus.		. . . . .

The Roman numerals on the margin refer to departments, as in the Syllabus following.

The † indicates the place of the study in the Course.

The ‡ means half-term study.

ENGLISH AND LATIN COURSE.

	STUDIES.	NORMAL.											
		1st Year.			2d Year.			3d Year.			4th Year.		
		1	2	3	4	5	6	7	8	9	10	11	12
I.	Psychology							†	†				
	Ethics									†			
	Pedagogy				†		†					†	†
	School Law										†		
	Practice Teaching						†	†		†			
II.	Botany						†						
	Physics				†								
	Zoology					†							
	Physiology						†						
	Chemistry										†		
	Geology											†	
	Astronomy												†
III.	Arithmetic	†		†									
	Algebra				†		†			†			
	Geometry							†		†			
	Bookkeeping											†	
IV.	Reading and Phonics	†					†						
	Grammar			†			†			‡			
	Rhetoric							†					
	English Anal. & Comp'n									‡			
	English Literature										†		‡
	Elocution												†
	Spelling												
V.	Geography	†		†						†			
	History			†							†		‡
	Civil Government									†			
VI.	Penmanship	†											
	Drawing				†		†				†		
VII.	Vocal Music			†									
	Physical Training	See Syllabus.											
VIII.	Latin	†		†	†		†	†		†			
	Greek										Optional.		

The Roman numerals on the margin refer to departments, as in the Syllabus following.

The † indicates the place of the study in the Course.

The ‡ means half-term study.

SYLLABUS OF THE COURSES.

I. Mental Science and Pedagogy.

William F. Rocheleau.

PRACTICAL PEDAGOGY.

The special work of fitting the pupils to become teachers in the common schools of the State begins with the fourth term. To this end the pupil is led to study the need of education; aim of the school; courses of study for common schools. The course of study recommended for the common schools of the State is made the basis of this study; other courses are compared and discussed in connection with it. Special attention is also given to the work in primary grades. This is done for the purpose of giving the pupil an understanding of the kind and amount of work that can be undertaken in these grades with profit.

The study of grades is followed by observations in the Preparatory schools. Each student is required to observe the work of the Training teachers carefully, and make a written report of each visit. In these observations the student is required to note carefully the following points: The general appearance of the class; demeanor of the pupils towards each other and towards the teacher; care in answering questions; distinctness of utterance; interest in the lesson; clearness of presentation of the subject on the part of the teacher; teacher's ability to govern, and to awaken enthusiasm in the pupils; evidence of preparation for the work on the part of the teacher. Lectures are also given during the term on school management, the art of studying, school government, the selection, care, and use of school libraries.

The work of the fifth term begins with a brief study of the mental powers, including their classification and the order of their development as discovered from the study of the child. Special attention is given to the importance of training the powers of observation, attention, memory, and imagination during the school period of a child's life. This is followed by a study of the sensibilities and will, their relation to the intellectual powers and the necessity of their proper training. After completing the outline of the mental powers, the class proceeds to discuss the following topics: Education, including the different

kinds of education and their relation to each other, and the right order in education. The teacher, his preparation for work; his motives, habits, and aims; his relation to his pupils, school officers, and the community. The school house, furniture, and apparatus, including care of house and grounds, and care and use of apparatus. The school, its organization; plan for the first day's work; program; purpose and management of the recitation; the end and aim of school training. *Textbook and Lectures.*

THEORETICAL PEDAGOGY.

Since this department of pedagogy follows the study of psychology, it gives an opportunity for a more complete study of the application of the laws of mental development to the acquisition of various branches of knowledge. The meaning and scope of education, and the three lines of educational development, are fully discussed. Special study is also given to sensation, conception, attention, memory, imagination, reasoning, including the different forms of reasoning and use of the syllogism. The emotions and their relation to education, the necessity for moral and religious training, and for training the will, also receive careful attention.

The work of the last term is devoted to the study of educational ideals, showing their origin and growth, the efforts made to realize them, and their relation to modern educational systems.

SCHOOL LAWS OF ILLINOIS.

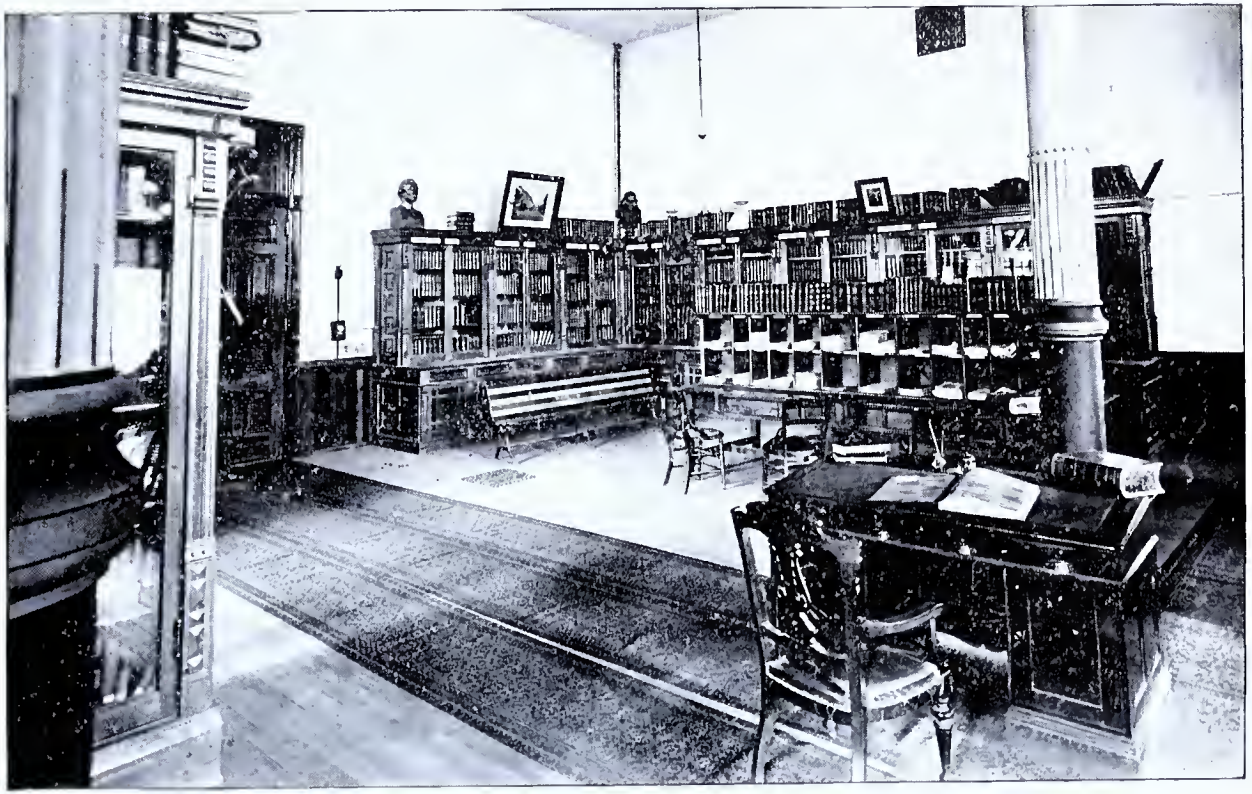
The student is made sufficiently familiar with the school laws of the State to enable him to discharge the legal duties of the profession in a proper manner.

PSYCHOLOGY.

The object to be attained by the study of psychology is to enable the student to obtain a good knowledge of the mental powers, their classification, and the laws governing their development and activities; then by careful study to apply this knowledge to his own experiences. The fullest possible discussion is given each topic in class, and the application of psychological principles to education is constantly kept before the student's mind.

ETHICS.

Psychology is followed by the study of ethics for one term. Special attention is given to the study of action and the springs of action; conscience, its origin and functions; the governing principles of action; rights and obligations; motives, passion, habit; the cardinal virtues; and the application of the principles of the science to the formation of character.



Corner in Library

Chemical Laboratory.

II. Physical and Biological Science.

PHYSICAL SCIENCE.

DANIEL B. PARKINSON.

PHYSICS.

The general method of instruction partakes more of the inductive than of any other, but a happy combination of all good methods is attempted. The limitations of time forbid a too rigid use of the inductive.

The institution is supplied with an excellent collection of physical apparatus, which is used by both student and teacher in developing and explaining the principles involved as the various subjects are presented for study.

1. *Somatology.*—Properties of matter, general and specific, physical and chemical. Changes of matter, physical and chemical. Attractions and motions of atoms, molecules and masses. States of matter; the distinctive features of solids, liquids, and gases. Molecular forces; various examples of cohesion and adhesion; the nine varieties of adhesion.

2. *Dynamics.*—Attraction of gravitation; laws of gravitation and weight. Center of gravity; line of direction, degrees and condition of stability, examples of each. Laws of motion; curvilinear motion and its effect on solids, liquids, and gases; composition and resolution of forces. Falling bodies; laws of falling bodies, formulas for the same. The pendulum; different kinds, laws and uses of the pendulum, center of oscillation; length of second's pendulum at different points on the earth's surface. Energy, kinetic and potential; formula for kinetic energy. The simple machines; static laws for each, compound machines. Friction; uses of friction, facts regarding friction, lubricants.

3. *Hydrostatics.*—Liquid equilibrium; transmission of pressure by liquids, downward and lateral pressure exerted by liquids, buoyancy of liquids, the principle of Archimedes. The hydrostatic press; the principle of its great power. Specific gravity; of solids, liquids, gases; alcohometers, hydrometers, lactometers. The specific gravity of a variety of specimens determined.

4. *Hydrokinetics.*—The discharge of liquids through orifices; the range of a stream of water from an orifice, problems to determine the amount of liquid discharged when conditions are given. The flow of water in rivers, water wheels, artesian wells.

5. *Pneumatics.*—Properties of gases; the air as a standard or type, atmospheric pressure, the barometer: the practice of noting the readings of the barometer, especially of the aneroid instrument. The air pump; its construction, kinds. The suction, and force pumps; the siphon, its uses, principle of its action. The condenser; Mariotte's law relating to the volume of gases as affected by pressure.

6. *Acoustics.* — Vibrations: transverse, longitudinal, torsional. Experiments with the monochord, nodes and segments. The sonometer, developing the laws of vibrating strings. The cause and nature of sound waves. The reflection and refraction of sound waves. The musical scale and musical instruments.

7. *Heat.*—Sources and character of heat waves. Temperature; the thermometer, method of making and grading the different kinds. Practice of reading thermometers and converting readings of one into those of the others. Liquefaction; laws of liquefaction. Vaporization; laws of vaporization. Distillation of liquids. Latent and specific heat. The heat unit; practice in making freezing mixtures. Diffusion of heat; examples of conduction, convection, and radiation of heat. Thermo-dynamics; the mechanical equivalent of heat, Dr. Joule's law.

8. *Electricity.*—Origin of name; a short history of its discovery and development. Static electricity; development of the laws of attraction and repulsion. The electrophorus; condensers; the Leyden jar, how charged and discharged. Static electrical machines with numerous attachments. Magnets, natural and artificial; laws of attraction and repulsion; the electroscope. Current electricity; the Voltaic battery; different kinds, and how set up; internal resistance, polarization. The various effects of the electric current; the electric units; the electric magnets; the electric telegraph; the electric dynamos; the electric motors; the electric lights, arc and incandescent; the telephone and phonograph; electrotyping and electroplating.

CHEMISTRY.

The chemical laboratory of the institution is well equipped with material and apparatus for individual experimentation. The inductive method largely prevails.

1. *Chemical Nomenclature.*—Atoms. Molecules. Substances; elementary and compound, organic and inorganic. Chemism; peculiarities and characteristics of chemical action. Symbols. Quantivalence. Reactions and reagents. Scheme for the study of the elements: 1. Symbol; 2. Atomic Weight; 3. Molecular Weight; 4. Quantivalence; 5. Spe-

cific Gravity; 6. Occurrence: 7. Preparation; 8. Physical properties; 9. Chemical properties; 10. Uses: 11. Tests: 12. More common compounds. Ampére's law.

2. The elementary constituents of water and the air. The compounds of hydrogen, oxygen, and nitrogen.

3. *The Halogen Group.*—The study of each, and their more familiar compounds, especially with hydrogen.

4. *Stoichiometry.*—Chemical equations. Factors and products in chemical reactions. Gravimetric computations. Volumetric computations. Percentage composition. A thorough drill in the above exercises, making estimates of weights and volume in chemical reactions.

5. The Theory of acids, bases, and salts. The combinations to form each. Classification of acids and salts. The manufacture of the common acids, bases, and salts.

6. The study of the elements by groups, giving more attention to those most common.

7. A brief course in Organic Chemistry. The principal distinctions between organic and inorganic compounds. A study of the more common organic substances.

GEOLOGY.

In the introductory study of this science special attention is given to the present conditions of the earth's surface and the changes now making, that the student may appreciate the conditions necessary for formations of earlier geological ages.

The study is supplemented by a brief course in mineralogy. A number of mineral specimens are determined. The students are made familiar with scales of hardness, fusibility, and the systems of crystallization.

1. *Dynamical Geology.*—Atmospheric agencies: origin of soil, action of the air, wind, frost. Aqueous agencies, erosion by rain, by rivers, by waves. Transportation and distribution of sediments, deltas, estuaries, bars. Action of tides, oceanic currents. Glaciers, icebergs.

Organic agencies: Vegetable accumulations, iron accumulations, lime accumulations. Geographical distribution of species.

Igneous agencies: The interior heat of the earth, volcanoes, geysers, earthquakes. Gradual oscillation of the earth's crust, subsidence.

2. *Structural Geology.*—General form and structure of the earth, stratified and unstratified rocks. Metamorphic rocks. Mineral veins. Mountain systems.

3. *Historical Geology.*—General principles of sedimentary deposit. Laws governing animal and plant life. Eozoic era, eozoön age. Palæozoic era, ages of invertebrates, fishes, and acrogens. Mesozoic era, age of reptiles. Cenozoic era, age of mammals. Psychozoic era, age of man.

Each member of the class is expected to become familiar with the geology of his own county by consulting the State Geological Reports of Illinois.

ASTRONOMY.

The institution is provided with one of Clark & Son's five-inch refractors, with eye-pieces ranging in power from 50 to 360. The instrument is used freely by the students, and they are expected to make drawings of their observations.

1. *The Relation of the Earth to other Heavenly Bodies.*—Motions of the earth, laws of motion and gravitation. The theory of eclipses of sun and moon. Motions and attractions of the moon. Causes of the moon's phases.

2. *The Solar System.*—The sun. Planets and their satellites, asteroids. Comets. A description of each, their motions, periods, etc.

3. The constellations; stars, star clusters. Variable and multiple stars. Nebulæ. The galaxy.

4. Astronomical instruments. Celestial measurements. Measures of time. Construction of calendars, etc.

BIOLOGICAL SCIENCE.

GEORGE H. FRENCH.

BOTANY.

The leaf: structure, form, simple and compound; floral organs, parts of each; fruit, kinds, seeds; germination and growth. Vegetable physiology; the cell, forms, growth, contents; anatomy of plants; plant food and assimilation. Cryptogamous plants, growth and structure; groups, reproduction.

The first two weeks of the term are spent in preparation for analysis of flowers by use of herbarium, with appropriate lessons from the text-book. After this, fresh flowers are placed before the pupils for analysis. As supplementary to the text-book work each one is expected to write out the analysis of at least twenty-five flowers in a copy of Keed's Plant Record Book, with drawings of leaf and flower, besides making drawings of seeds, buds, fruits, etc., with appropriate descriptions.

ZOOLOGY.

What is an animal? general idea of the animal kingdom, basis of classification; kingdoms. Vertebrates; study of classes and orders; illustrations and analyses with methods of preserving and caring for specimens. Articulata; classes and orders; illustrations and analyses, with preparation of specimens: in insects, study of those injurious and beneficial. Mollusca; study of classes and orders, with illustrations, etc. Radiata and Protozoa.

As an illustration of method of work, in birds the general characters are first studied, then each order is taken up; the order characters are studied, the birds representing the order, and distribution. The collection is used to illustrate the lesson, and with Jordan's Manual of Vertebrates, specimens are placed before the class for analysis. Some time is given to taxidermy, mostly as work outside the recitation hour.

PHYSIOLOGY.

Skeleton. Terms of the science defined; tissues; skin and the parts pertaining to it; food; digestion, including organs and fluids; absorption, lymphatics; respiration; circulation, heart and accessories, blood; excretion. Nervous system; brain, nerves, sympathetic system; special senses; vocal organs. Motatory organs in detail.

The first few lessons are given from the skeleton, after which the text-book is taken. Compound microscopes are used through the term for histological study, and charts, models, and skeleton are used for illustration. A regular course in dissection is given to more fully illustrate the study than can be done with charts and models.

III. Mathematics.

ARITHMETIC.

WILLIAM H. HALL.

Those students who hold first grade certificates to teach, or who can pass a creditable examination in the fundamental principles, including fractions, denominate numbers, and percentage in all its applications to business affairs, are admitted to the Normal Department, and are given two terms' drill in arithmetic, with the two-fold object: (1) of acquiring a sufficiently extended knowledge of the subject to make them ready and accurate in all the operations that may be required in the solution of problems, and to gain that independence of

thought which is so essential to a thorough mastery of any subject; (2) that a careful attention to the methods of presentation and the details of the science of teaching may enable the pupil to impart that which he has gained in the way to make it most effective.

First Term.—Review of fundamental principles and a thorough investigation of fractions, common and decimal; denominate numbers; the metric system; percentage and its application to business affairs, including insurance, taxes, stocks, and stock investments; interest; bank and true discount; partial payments, etc., as far as equation of payments.

Second Term.—The subjects of equation of payments, annuities, alligation, involution and evolution, and measurements of surfaces and solids, are taken up and carefully discussed, and supplementary work, covering a wide range of subjects suited to arithmetical calculations, is given.

Throughout the entire time, the necessary time and care are given to method and form; and this drill is supplemented by actual class work under the supervision of an experienced instructor.

ALGEBRA AND GEOMETRY.

GEORGE V. BUCHANAN.

ALGEBRA.

The study of algebra extends through one school year, being divided into three grades, known as the C, B, and A. It is the province of the C, or fall term class, to make a thorough review of the subject from the beginning to Simultaneous Equations of the First Degree, with frequent drills and tests with examples from other texts.

The B, or winter term class, continues the work from this point to Radicals, with frequent tests from other authors, as before.

The A, or spring term class, takes up the work where the B class leaves it, and advances to the close of the discussion of the Binomial Theorem. In each grade there are at least three examinations, one of which may be oral. In all this work it is the aim of this school to lead students to a mastery of the principles involved, and then to have them illustrate the use of these principles in problems which are solved and explained in class.

GEOMETRY.

The B class devotes the fall term to the study of Plane Geometry, and aside from doing the definition work and making the author's proofs, about one hundred and twenty-five or one hundred and fifty original demonstrations are given. In making the author's proofs, the

figures are differently lettered, and other changes occasionally made, and the student usally makes his proof orally and with only the figure before him. In all examinations, after the first, the student is given the theorem, and required to construct his own figure before giving the demonstration.

The A class spends the winter term on Solid Geometry. The methods of recitation here are very much the same as in the Plane Geometry. Examinations and tests occur very much as in the algebra.

BOOKKEEPING.

MARY A. ROBARTS.

No attempt is made in our work to vie with the business colleges, but we do teach the theory of double entry bookkeeping, and give sufficient instruction to enable one who has completed successfully the work with us, to enter upon the teaching of it in the public schools, or to keep any ordinary set of books.

Particular care is taken to see that pupils understand the common business papers, such as notes, drafts, checks, receipts, correct form of business letter writing, etc.

IV. English Language and Literature.

GRAMMAR.

MARTHA BUCK.

Three terms in the Normal Department have grammar as one of the required branches.

Before entering these classes, pupils pass an examination equivalent to that for a second grade certificate.

The aim is twofold: To obtain a mastery of the topics studied, and clear ideas of how to teach them to others.

One day of each week is free from any assigned lesson. Each class is allowed the time for questions upon any points not understood, or upon how to teach any point.

The first term is given to the simple sentence in all its varieties, with its proper capitalization and punctuation. As the elements are studied, the parts of speech of which they are composed are reviewed with their properties and inflections. The value of each principle as a guide to correct English is tested as they are applied in answering the

questions asked by the class. The composition in this term's work consists in expressing the given thought in a variety of forms, thus gaining a ready command of our language.

The second term's study is given to compound and complex sentences. In this term abridgement is treated and its grammatical changes noted, with the principles which underlie them. Essays are required each month, upon topics assigned.

A half term—six weeks—is used in a special study of methods. This work begins with the first Language Lessons and takes up grade by grade through Grammar to the close of a High School course. What is suitable to each grade, and how to adapt the teaching to the capacity of the pupils, are the central points for consideration. Thus a complete review of both Language and Grammar is incidentally obtained.

In addition to the work indicated above, a half term is used for English Analysis. The difficult points in grammar are studied. Entire compositions are analyzed logically, the line of thought discerned, and the logical sequence of paragraphs or sentences perceived. The principles of rhetoric are applied in a rhetorical analysis, and the principles of grammar in a grammatical analysis of the same composition. In this class, essays and orations are required.

LITERATURE, RHETORIC, ELOCUTION, AND READING.

SAMUEL M. INGLIS.

In the study of literature the constant aim is to arouse an enthusiasm for the study of the best authors in both English and American literature, by means of biography, analysis of thought, and close criticisms of works read. We also develop the study of this branch through its parallels of growth with the political status of the country and the times in which the authors flourished and wrote, showing in an attractive way to a student, the origin of much of our best literature.

We utilize the study of rhetoric in comparing the writings of the best authors in purity, propriety, and precision of diction; in concord, clearness, unity, energy, and harmony of the sentence or sentential structure; in impressing upon the mind and heart of the student the beauty of style in the writings of the best authors, as regards the use of figurative language; in cultivating delicacy and correctness of taste, and a high idea of the beautiful and sublime, as also a keen sense of the novel and picturesque as these properties of style and taste find their parallels in nature.

Our work in these two branches is very largely illustrative—done orally and by much blackboard work.

History Room

Art Room.

Gymnasium.

Class in Physical Training.

Elocution.—In this branch we endeavor to secure a thorough analysis of the thought embodied in selections from our best writers, and the productions of our best orators, on the basis of *form*, *quality*, *force*, *stress*, and *pitch* of voice, and rate of utterance.

It is likewise our aim to teach grace of body in posing, and in gesture with its varied significance when applied to the art of elocution, the actual utterance—action.

Voice culture in the different qualities of voice used in the finer work of the subject, forms a large portion of the class work at each recitation. Actual practice in class by means of dictation exercises is a thing of daily occurrence.

The oral examinations consist of recitation work, the student giving an exact analysis of the selection, regarding the essential elements of rendition: form, quality, force, stress, pitch, and rate, and the logical grouping of thought. The student's power of analysis is thus tested in the actual delivery of the selection, from the platform.

Reading.—This branch is taught by a system of classification: matter-of-fact, earnest, noble, joyous, sad, scornful and sarcastic, humorous, and impassioned ideas.

Grouping ideas into their respective classes as above indicated, we study to develop the elements necessary to render profitably and effectively any selection read. We analyze and illustrate here also, as in elocution, using the elocution of reading, and *not* the elocution of the platform.

The system used is that of Mark Bailey, M.A., teacher of elocution in Yale College. The scheme and method is our own.

V. Geography and History.

GEOGRAPHY.

INEZ I. GREEN.

The time given for the study of geography in the Normal Department is three terms. The classification is made under three heads, viz: B Geography, A Geography, and Physical Geography.

The B division of this department represents the work of the first term. Students entering this class are expected to have had a fairly thorough drill in the work embraced in our Preparatory Course. The first topics taken up are embraced under the head of Mathematical Geography. The influence of the sun upon the earth, and the relations of the two, is the direct practical purpose of teaching in this stage of

the course. This implies a good knowledge of the distribution of heat and moisture, and of the modifications brought about by the different degrees of atmospheric pressure. These are the essential factors in the study of climate. Climate determines the use of the structure, and structure in a marked degree modifies climate. Both seem to be the two halves of a great whole, which nourish and support life, plant and animal, and at the same time determine the forms and modes of life.

The second step is in relation to continents, in respect to their physical features.

A knowledge of structure being the indispensable foundation of all geographical knowledge, without this knowledge, geography, as a science, is impossible. One important purpose in learning structural geography, is the acquisition of a concept which corresponds to the surface structure of the earth.

A concept of the earth with all the factors of structural geography, organically arranged and related, is the basis of political geography. With a clear concept corresponding to the continent, political geography becomes, to the interested pupil, the division of real, mentally pictured surface into its artificial regions. The element of history in geography is not neglected. Geography explains and illuminates history; by it, laws, tendencies, and motives are understood.

The second term's work (A division) is a continuation of the work as carried on in B, except more time is given to the discussion of methods. (To understand a method, a teacher must know the laws of mental development, and the means of the development. Under this knowledge methods may be studied. Perfection in methods is a pure ideal.) As far as possible the successive steps represented by an accepted course of study, are discussed.

The study of physical geography proper covers the third term's work. The aim is to discuss the more familiar physical features of the earth; the character of its land surface, the nature and movements of the water and of the atmosphere, and their relations to and influence upon one another, as well as their combined effect upon the different forms of organic life.

HISTORY AND CIVIL GOVERNMENT.

ESTHER C. FINLEY.

The objects of the work in this department are to aid in forming intelligent, patriotic, responsible citizens, and so to develop the ability to communicate, that the student may become a successful teacher.

HISTORY OF THE UNITED STATES.

The time given to this branch is two terms. In connection with the study of the events that prepared the way for our national existence, and of the marvelous growth and prosperity that have marked our life as a nation, attention is given to the principles of our government, and to the lessons from the lives of great men, whose influence has been potent in shaping our destiny. The constitution of the United States is taken up topically in the history classes, and those ideas are emphasized, which are most practical to good citizenship, as the supremacy of the United States government, the rights of citizens and the duties corresponding.

CIVIL GOVERNMENT.

One term in the Junior year is given to this branch. The interests of the citizen—industrial, social, political—form the subjects of study.

Students are made familiar with the sources whence we have derived our civil and social institutions, with the modification of German and English ideas, to adapt them to the different conditions of life in our republic.

The relations of the citizen to local and State government are studied, also the dangers arising from political corruption, and the individual responsibility for securing and maintaining good government.

GENERAL HISTORY.

This study requires one term and a half—twenty weeks—in the Senior year. The outlines of the world's history are taken up to teach the unity of the interests of mankind in all time and all lands; to show the debt that the favored present owes in art, literature, and the science of government to the older civilizations of the past.

The humanizing and broadening influence of the thoughtful study of history is universally recognized, and an earnest effort is made to form a taste for historic reading. To the history of England, especial attention is given because of its close connection with that of our own land and with all that is best in modern progress.

VI. Drawing and Penmanship.

DRAWING.

MATILDA F. SALTER.

Three terms, or forty-two weeks, is required in drawing—two terms in the first two years of the course, and the third term, the last year.

Many coming to us have never had any work in drawing, so the first term is necessarily preparatory. The work is entirely freehand and largely from blocks and simple objects, beginning with the sphere.

As to its purpose, the drawing work is divided into Construction, Representation, and Decoration. The work on the charts will show the order of study in each division. Our aim in the first term is to enable the pupil to make construction drawings from blocks and from objects, showing one and two views; to give him a clear idea of drawing simple objects, cylindrical and rectangular in form, and of the arrangement of groups showing two and three objects; to help him to understand the modification of geometric units, also the drawing of leaves from nature, their conventionalization and application in design.

From the first, work on the blackboard is given, the drawings being from dictation; afterwards, the pupil is required to make these drawings in his book, and also to write dictation exercises. A book may be found showing examples of these. (See our Columbian Exhibit.)

The second term, B, follows the same general plan as the first term. Geometrical problems are introduced, and the construction work is made largely instrumental. Attention is paid to the arrangement and sketching of groups of familiar objects, most of them being selected with reference to being easily obtained in a school room. Some study is made of historic ornament during this term. The characteristics of the different styles are taught, and illustrations of the different forms shown.

The third term, or A Drawing, takes up the work of light and shade, drawings being made, first from blocks and objects, and then from casts.

Considerable attention is paid to blackboard work, the drawings being largely illustrative. The object is to enable the pupil to use the blackboard in the school room with ease and rapidity.

Two weeks time is devoted to methods, which includes the reasons for the study of drawing, a review of the plan of work, and methods for teaching in the different grades.

PENMANSHIP.

MARY A. ROBARTS.

The aim is to form a hand-writing, plain and legible, which shall be written quickly and with ease.

To accomplish this, we use the muscular movement, practice daily upon movement exercises, and study the form of each letter separately. The small letters are first made with counts. Particular attention is

called to the manner of joining letters, to the spacing of letters in words; also the spacing of words in a sentence. Frequent drills in blackboard writing are given. Different methods in use for teaching children to write are discussed in class, and definite instruction given.

VII. Vocal Music and Physical Training.

VOCAL MUSIC.

SAMUEL M. INGLIS.

Our work in this, one of the fine arts, is somewhat limited of necessity. We teach simply the elements of music, mostly in the major scale, and fit the teachers to do the same work for the pupils in their schools. The ready reading of music at sight constitutes the real burden of the work.

The science of transposition is simplified and students are taught to transpose readily from one key to another.

Exercises in the art of correct breathing and voice culture are required daily.

PHYSICAL TRAINING FOR YOUNG MEN.

JOHN M. PIERCE.

Physical training in a Normal School, has two objects in view: First, the health and development of the students; second, their equipment as teachers, with a system of school gymnastics.

Both these ends are, to a considerable extent, gained by the same course of training. The students are exercised in a simple, graded set of gymnastics, such as they may use in any school; these are first learned as free movements, then with light apparatus, as dumb-bells, Indian clubs, wands, and poles. When the aim is to direct the attention, the movements are directed by commands and counting; when the gymnastics is to serve as a relief from a mental effort, it is accompanied by music.

The German system, as laid down by Carl Betz, is made the basis of the work, supplemented and varied by Swedish movement, following Baron Nils Posse.

In order to bring in the interest coming from spontaneity and competition, the class gymnastics alternates with exercises on stationary apparatus, guided by the Code book of Ludwig Puritz, and with athletic games, especially baseball and football; choice and enthusiasm are recognized as important elements in physical exercise.

Parallel with this practice is a course in the Theory of Physical Training, based on Anatomy, Physiology, and Physiological Psychology. The Theory embraces the history of Physical Training in its various national types, the forms of gymnastics and athletics included in a complete training, the essential elements comprising a gymnastic program or "day's order" and the progression from day to day, the physical and mental effects of such exercises, and the extremes and abuses to be avoided; also Hygiene, especially that of school life.

PHYSICAL TRAINING FOR YOUNG WOMEN.

MARY A. ROBARTS.

The object of this department is fourfold. First, to provide a recreative and developing exercise which shall be to the pupil a means of attaining symmetry of figure, grace, and suppleness in movement, health of body, and an ability to keep it in a vigorous condition. Second, to relieve the mental strain in connection with a school-day of continuous study and recitation. Third, to prepare pupils to conduct exercises adapted to the needs of the public schools. Fourth, to impress upon the minds of the young women the importance of a proper mode of dressing, a proper care of body, carefulness in regard to diet, and a personal pride in regard to health and carriage. Throughout the year there are frequent talks on these topics. The exercises are:

Fall Term.—Forming lines. Military and Swedish dressing. Military facings. Simple movements of the military set-up drill. Marching. Fancy steps. Swedish movements, as taught by Hartvig Nissen. German free movements.

Winter Term.—Advanced work in line of fall term. Wooden dumbbells. Short wands, in sitting and standing positions. Short wands with marching.

Spring Term.—General review of exercises of fall and winter. Long wands. Indian clubs. Running.

In addition to the above those who desire it are instructed in jumping and in work on the parallel bars.

VIII. Latin and Greek.

CLARA B. WAY.

The aim of this department is twofold—teaching and training. Both courses are so arranged as to give the requisite knowledge, and to train the teachers that they may be able to give such instruction in either language as will secure for their pupils admission to the classical course of our colleges and universities.

LATIN COURSE.

This course requires nine terms for its completion. The authors read are: Cæsar, Sallust, Ovid, Vergil, and Cicero. Selections from other authors are used as supplementary reading.

The first year is spent in acquiring the elements of the Latin language, in securing a vocabulary by means of inter-language translations, and in gaining a knowledge of the fundamental principles of Latin syntax.

In the second year, the work begins with a review of grammatical forms, and also of the chapters of Cæsar already read, and continues with the same author until there is more or less ability in sight reading. The translation of Sallust prepares the way for the work of the next year in Cicero; while the poetry of Ovid with its shorter sentences and easier construction, helps to a better understanding of Vergil's more complicated structure and arrangement of sentences.

The last three terms of the course are divided between Vergil and Cicero, increasing attention being given to Prosody, and also to the smoothness and accuracy of the language employed in translations.

All through both the Latin and the Greek course, prose composition, sight reading, map drawing, and essays on grammatical and historical topics, are used as valuable helps.

GREEK COURSE.
(*Optional.*)

The first year of this course is given to the study of a standard First Greek Book; this conducts the student through the common forms and inflections of the language, acquaints him with the leading principles of its syntax, gives him a distinct picture of the Greek sentence, and furnishes him with a short course of preparatory reading. A few chapters from the Anabasis give a foretaste of the work of the next year.

The second year continues the reading of the Anabasis, includes selections from the Memorabilia and from other Greek prose, and gives the student familiarity with Homeric style, Homeric dialect, and Homeric syntax as found in the Iliad.

IX. German.

German is an optional study, and may be substituted for Latin or Greek. After several years omission from the course, it has been added this year. There are now in the spring term two classes, which began

last September, and one class organized this term; the two former have followed texts: Collar's Eysenbach, a book of vocabularies, exercises for translation and grammar, and Joynes' Reader. One-third of the recitation hour is spent on the Eysenbach, the rest in reading. The r view reading is largely done by some one pupil, the others listening with books closed. As far as practicable, only German is spoken in the class, the lessons furnishing enough material for conversation.

The students have supplied themselves with the Bible or the New Testament in German for Sunday reading. German newspapers have been given them, from which they read to the class what they have found interesting. The geography of Germany, and the lives and writings of its greatest writers, have formed the topics for some of the conversations.

In the new class, conversation is the method of acquiring the language; no text-book has yet been used. The auditory perception and memory are appealed to first, and constantly, supplemented by blackboard and note books.

In all the classes, committing to memory prose and poetry forms a considerable part of the work; the pupils meet occasionally to sing the poems.

This course aims at securing proficiency in these four, named in the order of their importance for us: Reading, understanding the speech, speaking, writing,—reading for fullness, hearing and speaking for readiness, writing for exactness. Besides the above, the students, as future teachers, have frequently had their attention called to the methods used, to the reason for adopting one course or for avoiding another, the relation between the German and English languages, and to such references especially as bear upon German education.

HIGH SCHOOL DEPARTMENT.

The High School.

The *High School* has lately been organized. It meets the wants of a large number of young men and young women coming from Southern Illinois and adjoining states, who do not wish to take up the work of the teacher, but who wish to fit themselves for college or for business. Usual Courses of Study.

Class in Physical Training.

Class in Physical Training.

PREPARATORY DEPARTMENT.

The Preparatory Department consists of the Primary School and the Grammar School. Each of these schools has a course of four years, and together they make an eight years' course similar to that of the Public Schools.

In these schools the students of the Normal Department do the teaching required for graduation. They take charge of the various classes, and put into practice the theories of government, discipline, and instruction which have been subjects of study in the Normal Course.

The teaching is done under the immediate supervision of the training teachers.

In this department the following general principles are practically recognized as the basis of teaching:

1. Education is a growth.
2. To produce symmetrical growth all the powers of the child should be exercised.
3. Growth should result in the power of the child to control himself.
4. Growth is the process of co-ordinating the new with the old.
5. The teacher's whole duty is to furnish conditions for the proper exercise of the activities necessary to produce the growth.
6. Attention, fixed by interest on the part of the child; and patience, sustained by a knowledge of the conditions of natural development, on the part of the teacher, are the elements that bring success in teaching.

I. Grammar School.

George W. Smith—7th and 8th grades.
Ann C. Anderson—5th and 6th grades.

The work of this school is arranged to fit pupils who have completed the Primary School studies, for the Normal Department or the High School. This is also a general preparatory school for all wh

need to give special attention to one or more branches before admission to the higher schools.

The course runs through four years, and fits students, of proper age, for examination for second grade certificate.

COURSE OF STUDY.

STUDIES.	5th Grade.			6th Grade.			7th Grade.			8th Grade.		
	1	2	3	4	5	6	7	8	9	10	11	12
Reading	*	*	*	*	*	*	*	*				*
Language	*	*	*				*	*	*			
Grammar										*	*	*
Writing and Drawing	*	*	*	*	*	*						
Writing							*	*	*			
History				*	*	*				*	*	*
Drawing										*	*	*
Vocal Music	*	*	*	*	*	*						
Arithmetic	*	*	*	*	*	*	*	*	*	*	*	
Geography	*	*	*				*	*	*			
Science				*	*	*						
Physiology										*		
Zoölogy											*	
Physics												*
Botany									*			
Physical training	See Primary School Syllabus.											

SYLLABUS OF WORK.

READING.

In the fifth grade the Fourth Reader is completed.

In the sixth grade entire selections from standard authors are used as the text for the reading.

Care is taken to develop a love for the best in literature, that by this love the child may be guided in his after reading to select the best books. The books used in this grade are Lamb's Tales from Shakespeare, Hiawatha, Ruskin's King of the Golden River, Irving's Sleepy Hollow, and others of like grade.

In the seventh and eighth grades the reading matter is selected from the choicest American literature. Much care is taken to lead the children to see the "pictures" in the selections studied.

The object of the instruction is (1) to secure a free and natural oral expression of the matter read; (2) to fix in the child a love of good literature, and the habit of pure and noble thinking.

To connect the subject of Reading to that of Language the pupil is required to reproduce, in whole or in part, the selections studied. Constant use is made of the dictionary and other reference books.

The selections are from Burroughs, Longfellow, Hawthorne, Cooper, Irving, Bryant, Lowell, etc.

LANGUAGE.

In the fifth grade a text-book is used as a general guide in the study of Language. Besides this work two other lines are carried on, (1) reproduction of stories taken from Bulfinch's Age of Fable, Hawthorne's Tanglewood Tales, and other similar sources; (2) the analysis of poems. This is done by the children under the direction of the teacher while *speaking* the stanzas of the poems, one by one. The graphic mental pictures made during the reciting concentrates the thought so that the words are readily recalled. Afterward the poems are written from memory.

In the sixth grade, language as a separate study is dropped and the principles previously learned are applied in study in the preparation of written work on subjects taught in that branch.

The plan of the seventh grade work is similar to that of the two previous years, and has for its object the correct expression of the child's own thought.

Thought is stimulated through imagination and memory. The work of the teacher is to present the proper material for thought-growth, and to assist the pupil to form correct expression.

This thought-growth is secured by increasing the pupil's vocabulary, strengthening his memory, and developing his imaginative powers.

To prepare for the study and analysis of the thought of others, the pupil is made acquainted with the forms of thought-expression. These forms include the forms of sentences, punctuation, parts of speech, paragraphing, etc.

GRAMMAR.

The aim of the grammar work is to enable the pupil to think readily in the forms of the correct English sentence.

The plan is to continue the practice of sentence-building and sentence-analyzing begun in the language work.

As the sentence is the unit in thought, so it should be the unit of work for the pupil. Short, easy sentences are studied and enlarged by the addition of word, phrase, and clause elements. When the pupil knows well the structure of simple and complex sentences, some time is spent in the study of the modifications of the parts of speech.

The proper use of the irregular forms of words is taught by requiring pupils to use such words in original sentences.

During the latter third of the year the structure of sentences is studied quite closely and the rules governing construction learned.

WRITING AND DRAWING.

Writing and drawing are carried on in such a way as to give half the time of one study to each of them. The writing occupies the first three days of the first week and the first two days of the second week, and so alternates throughout the term. The drawing occupies the remaining half of the time.

WRITING.

The aim is to have all the work done with the muscular movement, to have the pupils acquire the style of writing which shall be theirs when grown, and to know how to arrange in good form any ordinary papers written in social or business life. These are accomplished by daily practice upon movement exercises, many of which are combinations of the various letters. Each letter is studied separately in both small and capital form. The correct manner of joining letters, the spacing of words in sentences, and the spacing of sentences are noted.

The acquired knowledge is then put into practice in writing notes, drafts, checks, receipts, orders for goods, friendship letters, etc.

At this stage unruled paper is put into the hands of the children, who now work upon difficult movement exercises and write from copy and dictation.

HISTORY.

In the sixth grade, a primary History of the United States is studied with special reference to the manners and habits of the people, the character of individuals, the moral lessons to be gained and the acquisition of stories for use in language lessons. In connection with colonial history Hiawatha and Miles Standish are read. Biographies of noted Americans, such as Washington (Scudder), Franklin, and Lincoln, are studied. Lines of thought suggested in the history are followed out in reading, at home, books taken from the library of this department. Among these are The Story of Liberty, Boys of '76, and Boys of '61.

In the eighth grade, history is studied from a regular text. Children naturally locate incidents in time and place. Hence the close relation of history and geography. A pupil does not know a historical fact until he knows the time (approximately) and the place definitely.

One of the highest duties of an American citizen is to contribute to the perpetuity of our free institutions. A study of history which does not lead the pupil to appropriate that which is pure and noble in the lives of others, and shun that which is false and ignoble, fails in that for which this study is introduced into the school course.

Near the close of the year a few weeks are devoted to the study of the Constitution of the United States.

DRAWING.

Drawing is studied under three heads.

Construction.—Drawings made from objects, showing two and three views, also sectional views. Measurements taken from objects and figured drawings made. Instrumental work—problems applied in working drawings.

Representation.—Drawings from objects, cylindrical and rectangular. Arrangement of groups—work freehand. The aim is to teach the pupils to see correctly, and then, by practice, to give them the ability to express what they see.

Decoration.—Drawings of leaves and flowers from nature—arrangement in design. Copying and enlarging examples of historic ornament. Talks given on the different styles and illustrations shown. Work on the blackboard, from memory, and from dictation is also given.

MUSIC.

In the fifth and sixth grades, much of the drill work of the previous year should be reviewed. As advanced work, the children should vocalize many of the easier exercises, thus showing their power to think in tones. The first music reader should be completed. The children should be able to sing readily either of the parts in simple two-part music, and to give the time-names and to keep the time in any unbroken measure.

ARITHMETIC.

The arithmetic work for the fifth grade is based upon an elementary text-book. The year's work covers the fundamental operations, common and decimal fractions, and their application to applied problems in U. S. money.

Especial attention is given to the tables in multiplication and division, and to the correct forms of oral analysis in the written work. Much of the work in common fractions is done by inspection, but enough written work is given to acquaint the child with the written forms.

The sixth grade takes up the work with denominate numbers. The school is supplied with measures, weights, etc., for teaching objeetively this work. Mensuration of rectangular surfaces and solids is taught from aetual measurements. Rules are made by the children under the direetion of the teacher when the process has been grasped. During the spring term of this year the work is confined to the subject of percentage and its applieations. The work is brought close to the ehildren by comprehensive talks upon those business transactions in whieh pereentage calculations are involved.

In the seventh and eighth grades, a "praetical" arithmetie is the basis of the work, and all subjects usually treated in such books, are studied, except powers and roots.

Groups of ones studied as wholes. In addition, aceuraey and rapidity are the aims. Subtraction is shown to be a process of separating a given number (minuend) into two parts, one of which corresponds to another number called subtrahend. Multiplication comprehends the process of uniting into one number a given number of equal numbers of the same kind. Division includes division proper, and "partition."

Numbers below 144 are factored by inspection. Fractions are taught from the actual divisions of objeets, and the operations in both eommon and deeimal fraetions shown to be the same as those governing integral operations. Denominate numbers are studied from aetual weights and measures. A thorough mastery of pereentage depends upon an earlier mastery of eommon and decimal fractions. Interest and kindred subjects ean be eomprehended fully, only when the pupil has beeome somewhat familiar with the business transactions in whieh these subjeets are involved.

GEOGRAPHY.

Geography is one of the five studies of the seventh grade. The pupils use a complete descriptive geography as a basis of study.

The work takes up the notions of position, form, direction, distanee, motion, ete., as a means of developing eoneepts with whieh to work intelligently when the study becomes an imaginative one.

The home geography is studied first. The ideas of elimate, winds, oeean currents, mountains, and other physieal features, together with forms of government, soeiety, eustoms, products, eommeree, etc., are brought eut.

The continents are studied in the following order: North Ameriea, South America, Europe, Asia, Africa, Oeeana. As the work proeeeds, the similarities and contrasts in the physieal features are studied.

Map-drawing and supplementary reading are required.

SCIENCE.

For description of the science of the fifth grade, see outline for Primary School.

In the sixth grade a text-book is used for the first time. Before this time the science has been in the form of observation lessons and field work.

With the book the children take up, in the fall, the study of animals; in the winter, air, water, heat, light, etc.; in the spring, plants. For purpose of this work see sixth grade Language.

The science work of the seventh and eighth grades has for its objects to form, in the pupil, the habit of intelligent and systematic observation, to acquaint him with a few of the simpler laws of nature and to develop in him a proper regard for their observance, and to enlarge his fund of general information and awaken a love for nature.

The science work also presents an excellent opportunity for the cultivation of the child's powers of expression.

PHYSICAL TRAINING.

See Primary School.

Primary School.

(*Ages of Children, 6 to 10.*)

ANN C. ANDERSON.

Supervisors.—GEORGE W. SMITH, Number; MARTHA BUCK, Language; MATILDA F. SALTER, Drawing; INEZ I. GREEN, Geography.
Physical Training.—MARY A. ROBARTS.

Four years constitutes the course in this school, but the work is so planned that another year (called the A-third grade) may be added, if, on account of ill health, immaturity, or need of more drill on elementary branches, more time in this school would be profitable to one or more of the pupils. By this plan children may spend two years on third year work and then pass into the fourth grade, or they may pass from the third to the fourth grade, or from the A-third to the fifth, according to their ability, without detriment to them or to the class. The second year of the third grade is more advanced than the first, but the same branches are studied. The outline for this intermediate year is not given in this course.

No part of the child's life is so important as the first years. For this reason the outline of the Primary School is given in full.

In the Primary School the studies are more concentrated than they are in the higher grades. No one study excludes the others. Each is

included in all and all in each. In the outline an attempt is made to show this unity.

Picture-making with pencil and water-colors is encouraged throughout all the grades. This is used as a means to express thought. Water-colors have been found to be especially useful in science work.

Course of Study.

FIRST GRADE.

READING.

A child's life in school should be an enlargement of his former self. At first no new ideas are needed; but those he has acquired are to be recognized through a new medium—*written words.* The following first steps are believed to be so arranged that each is a sequence to the preceding one. They together form a gradual progression in learning to read.

1. Oral expression of thought in complete answers to questions (conversations). This is to secure the correct form for the unit of thought, the sentence.

2. The written form of action-words, for the action-word is the soul of the sentence; the idea presented before the word.

3. Pictures with action-words, forming sentences.

4. Names of the members of the class with action-words, forming sentences.

5. Analysis of words into sentences.

6. Synthesis of sounds into words.

7. Other words as needed; connecting words require special drill.

8. Print introduced after the thorough mastery of about one hundred words in script. (See first grade Reading Chart, in Exhibit.)

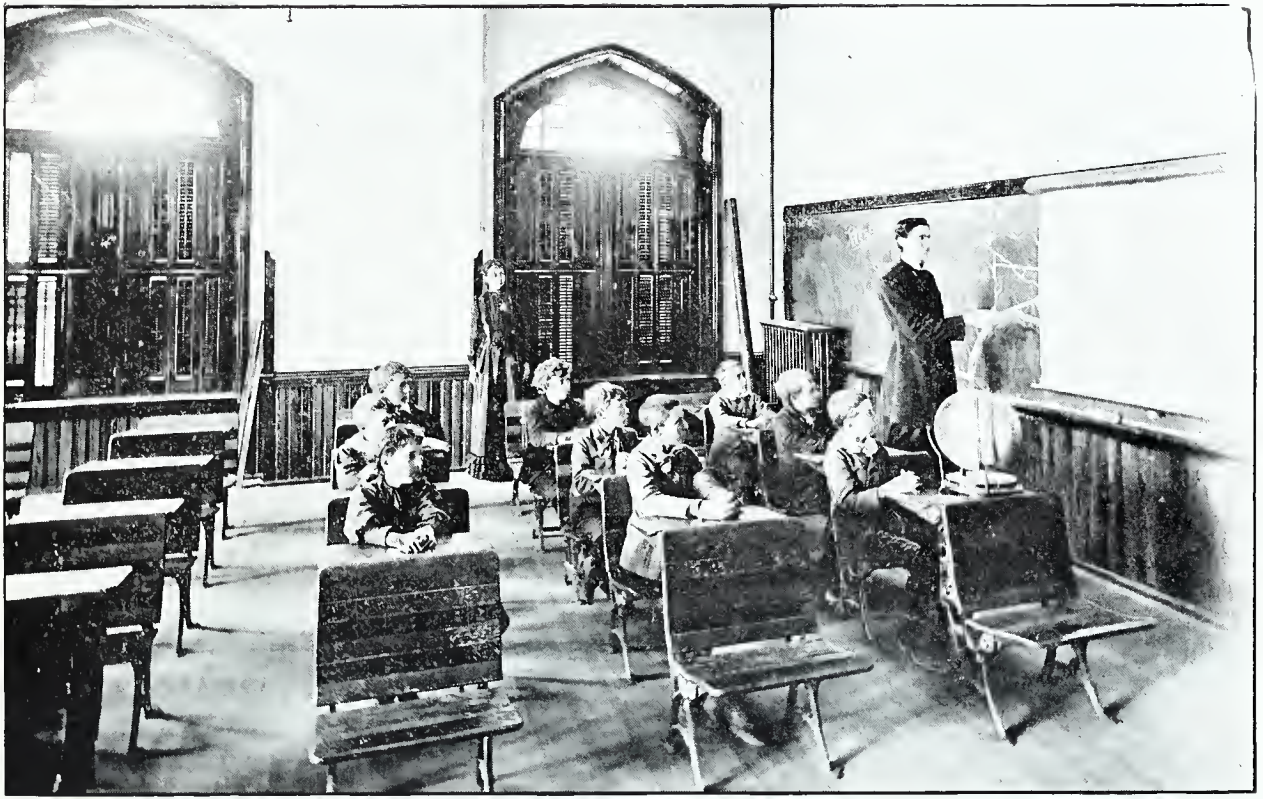
The equivalent of three easy First Readers the first year. Translating print into script by copying words and sentences from the readers. Original sentences as soon as the power of abstracting is developed.

Conserve energy by *preventing* errors. Secure right thinking and correct habits by so conditioning the child that the right will be easier than the wrong.

To be profitable, thought must be in every step.

Working Material.—In this grade the teacher of reading should be ready with the crayon in picture-making, and he should be also a good penman. Many objects are useful, but these qualities are indispensable.

Music Class, Fifth and Sixth Grades.



Practice Teacher and Class.

NUMBER.

Conversation lessons for a few days to determine the child's knowledge of number. The child learns to observe "how many" in objects, actions, and sounds. He is led to see a two, a three, or a four of objects in and among other objects. Familiar objects in and about the room are used.

Children are led to abstract the number from the objects before them, by asking them to tell the "how many" of objects and parts of familiar objects about home.

Children are taught to make accurate and rapid observations about the "how many" by means of sight cards. All the fundamental operations in number below eleven are learned the first year. The halves of 2, 4, 6, 8, and 10; the thirds of 3, 6, and 9; the fourths of 4 and 8, and the fifths of 5 and 10 are learned and treated as ones.

The work for the year is carried on under three heads, namely: (1) Finding out the number facts. This is done by requiring the pupil to handle sensible objects. When the fact has been reached much care is taken that the child states the fact in clear and concise language. (2) Fixing the number fact in the child as a part of himself. This is done by requiring each pupil to state the fact, which is afterward fixed by concert drill. (3) Applying the number facts in the making and solving of problems. The children make these problems concerning the buying of pencils, oranges, marbles, etc.; also about birds, eggs, chicks, pigs, etc.

Material.—The materials used in the work of the first year are splints, beads, shells, pebbles, inch cubes, foot-rulers; pint, quart, and gallon measures; birds (mounted), number chart, and blackboard, by the means of which the practice-teacher illustrates the work, thus developing in the child the power of expressing number facts by drawing and writing. The work during this year is drawn either from numbers of objects or from pictures in which the "how many" is a prominent feature.

LANGUAGE AND LITERATURE.

Language is a training that should result in correct and fluent use of English. The first steps toward this end are teaching correct sentence forms and correcting prevalent errors.

The material for this drill is furnished by the children, as they report daily on things they see and hear (field observations), and in retelling stories told to them.

Stories told the first year are The Little Red Hen, Three Little Pigs, The Fox and the Crane, The Fox and the Crow, and The Dog and the Shadow. Many of these are taken from Æsop. (See First Year Language Chart.)

The literature of the first year consists in the analysis of several simple poems. The poems are *spoken* to the children and they attempt to reproduce them. The poems used are Come Back Little Birdie; Two Little Blackbirds; Five Little Rabbits; Sleep, Baby, Sleep; Little Boy Blue; and Pussy Cat.

WRITING.

Material.—Special ruled slates and paper.

Writing is first mere copying of words learned in the reading and other lessons. Accurate mental pictures of single letters are produced by writing in the air and by tracing on slates and paper. Correct position and movement are attempted from the first. Efforts are made to bring *all written work* up to the standard.

The entire alphabet of small letters and some capitals are learned during the first year.

DRAWING.

The work of this year is from study, taught to develop the perceptive faculties. By it the child learns to observe and by it he gains a means of expressing his ideas. It is a help to him in all his studies and is taught with this in view.

The first year's work gives the child ideas of form as he handles the solids and makes them in clay. The type forms used are the sphere, cube, and cylinder. He finds, thinks of, and models objects like these. He learns to use and to write the names for the type forms.

The circle, square, and oblong are developed from the type forms made in clay: the same forms are cut in paper, and the square and oblong are laid with sticks. Similar forms are also made.

The primary colors, yellow, red, and blue, are taught in this year.

MUSIC.

Five minutes each day.

In the order of development the recognition of tones precedes the recognition of spoken words. Tone perception is readily cultivated very early in the child's school life. Deal with the tone, not with its sign. Direct the child's mind to the invisible things, not to the signs of these things, and he will learn to think in tones as he thinks in words, in numbers, and in colors. Thought should precede each step in music as certainly as it does precede each step in effective reading.

The steps to be taken the first year are as follows: Soft, pure tones always. The scale as a unit. Interval practice by calling the numbers of the scale and getting the tone in response. Modulator practice to secure change from any tone of one scale-picture to one of any other. Two-part time. Easy sight reading from the staff.

SCIENCE.

Purpose.—To enlarge the child's sympathy and to broaden his range of knowledge; to cultivate perception, memory, and judgment, that he may become a close observer, an accurate reporter, and a discriminating judge.

Field-work.—Reports upon observations are made during general exercises, in language or whenever they apply. Observations, though general, are so directed as to bring under notice points useful for future classification. Individual work is the best. The discoverer benefits the class hardly less than he benefits himself.

Material for the First Year.—Chiefly what is seen and heard.

Insects and birds in the fall.

Domestic animals in the winter.

Birds, buds, seeds, leaves, flowers, and insects, in the spring.

N. B.—All general principles and directions given for the First Year apply throughout the Primary School.

SECOND GRADE.

READING.

The distinctive features of the work of this year are two. (1) Quick sighting of words by means of their phonic elements, and (2) writing words from dictation (spelling). The facts to be learned of a word are the letters needed for writing the word; and the sounds, the syllables, and the accent, needed for reading the word. The ability to cover these four points depends upon the power to abstract the word. To some extent this power is acquired in the first year, but there are hundreds of words read by the children which they cannot write from memory. In the second year they begin to bring the power of reading and the power of writing more nearly parallel.

Until the child is independent of such help, he is assisted to the correct pronunciation of the difficult words before studying.

Simple homonyms—there, their; know, no; etc., are taught by their use in appropriate sentences.

Material.—The equivalent of two advanced First Readers, and the first part of one Second Reader, are read in this year. Blackboard and crayon for picture-making. Special ruled paper and pencils.

NUMBER.

The work of the first year reviewed to secure familiarity with the forms of thinking in number.

Numbers between 10 and 20 are shown to be a ten and a certain number of ones. Bundles of tens worked with as ones.

Children interpret from the number chart the written forms for the fundamental operations and illustrate them by means of splints.

blocks, etc. They solve problems, giving a very simple analysis. A few of the simpler measures are handled by the children in actual measurements.

All the number facts learned are applied in the making and solving of original problems by the pupils.

The work of the year should result in an ability on the part of the pupils to interpret symbols (figures) of numbers, and signs (+, —, ×, ÷,) of numerical operations through *twenty*.

Materials.—These are the same as in first year, with the addition of work with pencil and paper, yard stick, and actual division of objects to teach fractions.

LANGUAGE AND LITERATURE.

The work of the second year is similar to that of the first, except that the children are required to do more written work. Æsop's fables, and stories of familiar animals, are used chiefly for the language. Many of these stories are reproduced in writing, but before the children are asked to write, the *forms* of the words are made familiar to them, and also such technical points as will be needed to put into correct form the story which they are asked to write.

The literature of this year consists of the oral analysis of several simple poems, *recited* by the teacher to the children. Some part of the poem must be remembered and given back to the teacher. Before the end of the year the children are asked to reproduce some of these poems in writing, from memory. It is expected that both stories and poems shall be held in memory ready for repetition.

Some of the poems used are: A Million Little Diamonds, The Little Seed, A Week of Work, What Does Little Baby Say? and Seven Times One. (See Second Grade Language Chart.)

WRITING.

Material.—Special ruled paper and pencils.

Daily practice of free movement exercises.

All the letters, large and small, in the order of the alphabet.

Peculiar joining of letters.

DRAWING.

The work of the second year follows the same plan as that of the first, and the same objects are held in view.

The type forms used are hemisphere, square prism, triangular prism, semicircle, and equilateral and isosceles triangles.

The colors are orange, green, and purple, with those taught in the first year.

MUSIC.

Five to ten minutes each day.

Review scale and interval practice and spend a term or more on practice from the modulator.

Teach two-part (tā tā) and three-part (tā tā tē) time and practice sight-singing from the easiest exercises in many of the keys, from the first series of charts.

Some of the poems learned in literature may be profitably sung as rote songs.

SCIENCE.

Field-work.—The observations of the second year are on the same lines as those of the first year, but the children will see and hear more things in the second year, and they will see and hear these things more particularly. Reports are made in response to roll-call, at general exercises, in language or whenever they will apply.

In the fall notice seeds, fruits, birds, and trees. The preparation of trees and animals for winter.

In the winter notice winter birds, domestic animals, wild life, snow-flakes.

In the spring notice returning birds, vegetation, insects, flowers.

Material.—Colored crayon, colored pencils, water-colors and brushes, microscopes. Objects brought in by the children and brought from the museum for examination. The material is used freely by the children as soon as they show a disposition to handle the articles with care.

THIRD GRADE.

READING.

Dictation forms the principal work of the third year. The child is thrown more upon his own resources. He is asked to do original work, but the chief drills are intended to give him increased power in the use of words, to establish correct habits in form, to cultivate his memory, and to increase his power to bring his thought to bear upon any subject desired. Some of the methods used for these purposes are given below.

Dictation of words, stories, and poems; reproduction of stories; pronunciation drills; and memory poems, learned by concentration of thought. Defining, developed by substituting for the word used in the book, words from the children's vocabularies. Homonyms learned as the children discover them.

Material.—Two Second Readers or their equivalent are mastered during this year. Games and other devices are used to keep the interest sustained, but the distinction between work and play is kept clearly in mind. As far as practicable, the objects read about are brought before the class.

NUMBER.

The work for the year includes operations in numbers through 100.

Tens are worked with as ones were in the first year. The child is led to see that a hundred is made up of tens (bundles) as tens are made up of ones. He adds, subtracts, multiplies, and divides (also partitions) tens as ones. He learns to count to 100 by 2's, 4's, 5's, etc., and he also learns that any number, as 76, is made up of seven tens (bundles) and six ones. He reads it seven tens and six ones, or seventy-six.

Toward the close of the year the pupils do simple written work in the fundamental operations. This written work is illustrated with objects by teacher and pupils, until the pupil can give a clear statement of the process without the presence of the objects.

Material.—During this year the pupils use a text-book, by the use of which they learn to interpret the problems through words. The number chart is used as a means of drill to fix number facts. The pupils bring in, from time to time, the written solution of simple problems, and other written matter connected with the study of number.

LANGUAGE AND LITERATURE.

The language lessons of this year are carried on along two lines, oral and written. Conversation forms the basis of the first, and dictation exercises and short essays, of the second. The facts for conversation and essays are drawn from observation (field-work), books, and talks with friends. To cultivate system in writing, the essays are developed from suggested outlines. Very crude results are accepted at first if the work is the child's own, and his best. The dictation exercises are taken usually from the easier of Æsop's fables. They are used as form studies.

The written part of the science lessons is done as language; the oral part finds a place in any recitation to which the facts are applicable.

The literature for the year is taught by means of the following or similar poems: The Village Blacksmith; The Christmas Carol; Hark, Hark, My Children. Hark; Corn; and Winter.

WRITING.

Material.—Special ruled paper and pens.

Daily practice of free movement exercises.

The small letters in allied groups: *a* group (a d g q); *i* group (i u w t); *m* group (m n h y); *l* group (b l k f j z); mixed group (c e p r s x v); single letter (o).

Peculiar joinings and words difficult to write.

Review of the capital letters in allied groups.

DRAWING.

In the third year the same general plan is followed as in the first two years. The type forms are ellipsoid, ovoid, cone, and pyramid.

Dictation exercises on the blackboard and on paper and some drawing from objects give the opportunity to apply these type forms and those learned in the previous years.

MUSIC.

Ten to fifteen minutes each day. To develop tone perception, continue scale, interval, and modulator practice, and bring the children to recognize the major and the minor seconds. Practice in sight-singing as in the second year.

SCIENCE.

Field-work.—Attention is called to facts for special observation, and reports are heard upon these points. The children of this grade are advised to keep a field-book, and to record facts as they observe them.

Field-work for the fall.—Fruits, seeds, fall flowers; preparation of trees for winter; preparation of insects, and animals generally, for winter; migratory birds as they disappear; home birds in winter.

Field-work for winter.—The sky and landscape; rainfall, snow; coats of animals, fuel.

Field-work for spring.—Coming of the birds, buds, leaves, seeds, flowers, insects.

Material.—This is the same as in the previous year.

GEOGRAPHY.

A study of the child's mind shows his observing powers to be keener and more active than his reasoning powers. No study affords better opportunity for developing these powers than geography.

The primary purpose of teaching geography is to develop in the pupils' minds, concepts corresponding to the earth's surface.

In the elementary grades the process of thought is mainly inductive. The mental powers to be exercised are those of synthesis and analysis, the latter used to enhance the strength of the former. Color, form, and number are the essential factors of synthetic power. One important part of work in primary grades is the formation of general notions from sense products. Field lessons, observations, and investigations should form the essential part of the course. "Talking" and "Reading" lessons accompany the work throughout the entire course.

During the first two years many facts taught in language, drawing, and number, constitute the basis of the formal study of geography, which is begun in the third year. Some of these facts are impressions of form from handling and molding solids; ideas of surface; direction; points of the compass; location (place), and position; lines, measures.

In the third year the formal study of geography is begun by further developing ideas of color, form, distance, direction, and by reviewing the points of the compass. Distances and lengths are actually measured, and, after much practice with the unit of measure, the children are tested as to their ability to judge of these by the eye alone.

The plans of the school-room and school-yard are drawn, and the idea of drawing to a scale developed. Maps of the town and immediate vicinity are made from the children's own observation. The township, county, and State are taken up and drawn in regular order.

A-THIRD GRADE.

See Introduction.

FOURTH GRADE.

Syllabus omitted.

PHYSICAL TRAINING.

Fifteen minutes each day is devoted to physical exercises.

The only apparatus used is a wooden dumb-bell of light weight.

The exercises consist in seat gymnastics; marching; free arm, leg, and foot exercises. They are based on the Swedish and German systems combined.

All movements save those of the Swedish are regulated by the music of the piano.

OPENING EXERCISES.

A half hour each morning is given to opening exercises. The roll-call is followed by the recitation of a few verses of scripture, a short prayer, and a hymn. This occupies fifteen minutes. The remainder of the half-hour is spent in either singing, teaching through games, repeating selections of poetry and telling stories, or in free conversations about things which the children have observed. The last exercise gives excellent opportunity to correct prevailing errors of speech. Much of the science work in the lower grades is done at this time.

LIBRARY OF THE PREPARATORY DEPARTMENT.

The children's library consists of about three hundred volumes of general reading and reference, and about two hundred books, in different sets, for supplementary reading. Among the sets for supplementary reading are the following:

Two dozen copies of Æsop's Fables, used for language work.

Complete sets of the first four books of Johonnot's Natural History Series, used for reading, science, and language.

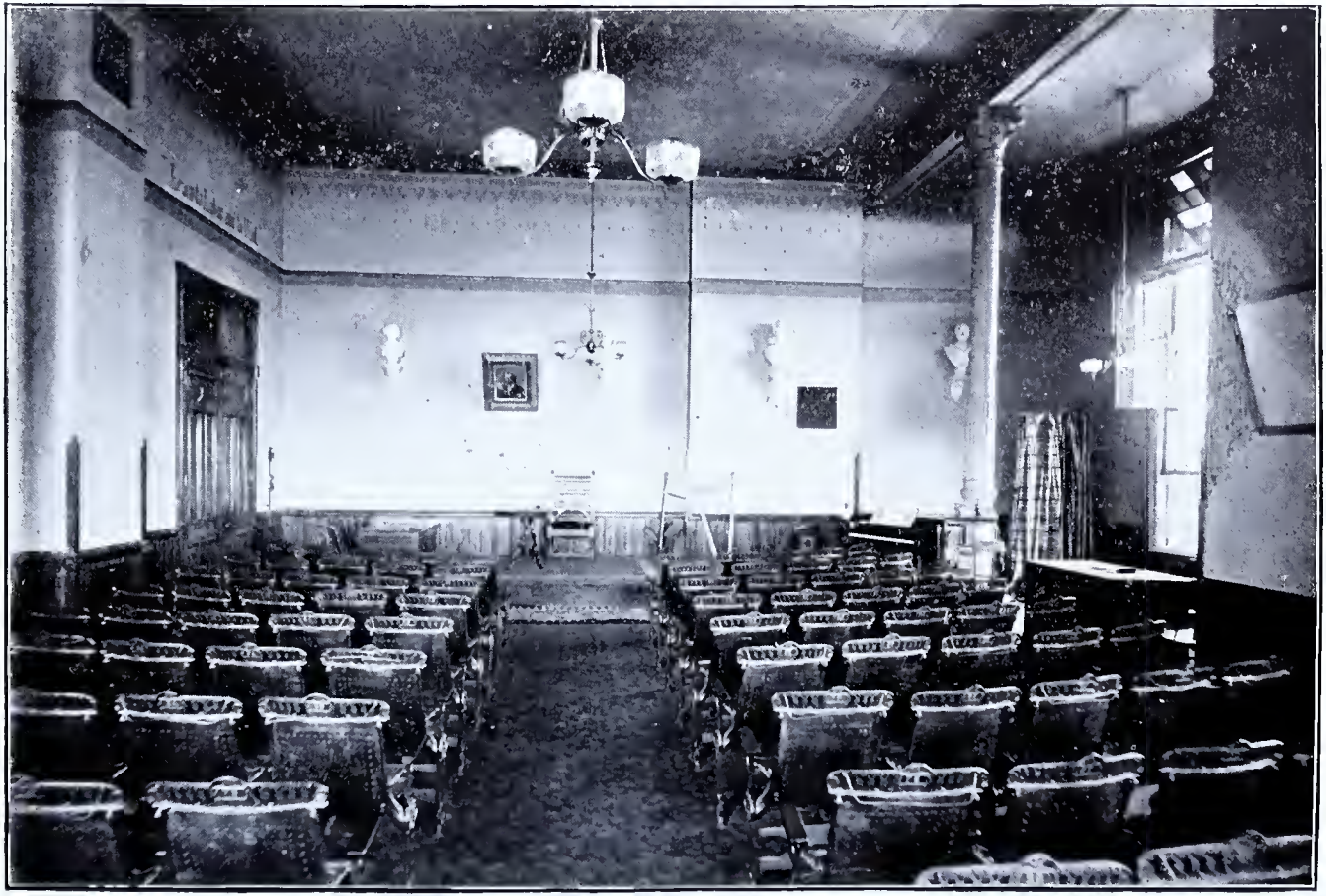
One and one-half dozen of Ten Boys on the Road, used in connection with fourth grade geography.

One and one-half dozen of Scudder's Life of Washington, used in history.

Two dozen copies of The King of the Golden River, and the same of Lamb's Tales from Shakespeare, used in reading and literature.

Books are taken from the library on Friday and kept two weeks if desired so long. Reports from the reading are received in any of the recitations in which the facts learned apply.

The librarian watches the development of the children's taste for reading, not forcing to any line of reading but directing to the best by suggestions and inducements. The books that children read when their taste for literature is forming constitute one of the chief factors in character building.



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